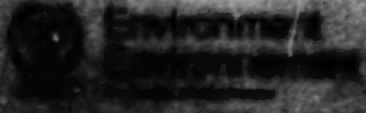
Drinking Water Surveillance Program

AMHERSTBURG WATER SUPPLY SYSTEM

Annual Report 1988



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AMHERSTBURG
WATER SUPPLY SYSTEM

DRINKING WATER SURVEILLANCE PROGRAM

ANNUAL REPORT 1988

FEBRUARY 1990

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EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM

AMHERSTBURG WATER TREATMENT PLANT

1988 ANNUAL REPORT

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. Currently, 52 plants are being monitored.

The Amherstburg Water Treatment Plant is a conventional treatment plant which treats water from the Detroit River. The process consists of coagulation, flocculation, clarification, filtration, disinfection and fluoridation. Activated carbon is added for taste and odour control. This plant has a design capacity of 18.8 x 1000 m^3/day and serves a population of approximately 15,957.

Raw and Treated water samples were taken on a monthly basis beginning in April. These samples were analyzed for approximately 160 parameters. Parameters were divided into the following groups Bacteriological, Inorganic and Physical(Laboratory Chemistry, Field Chemistry and Metals) and Organics (Chloroaromatics, Chlorophenols, Pesticides and PCB, Phenolics, Polynuclear Aromatic Hydrocarbons, Specific Pesticides and Volatiles).

A summary of results is shown in Table 1.

Inorganic and Physical parameters (Laboratory Chemistry, Field Chemistry and Metals) were below any applicable health related ODWOs.

Of approximately 110 Organic parameters tested for on a monthly basis, none exceeded health related guidelines.

During 1988 the DWSP sampling results indicated that the Amherstburg Treatment Plant produced good quality water at the plant.

TABLE 1

DRINKING WATER SURVEILLANCE PROGRAM ANHERSTBURG WSS

SUMMARY TABLE BY SCAN

SCAN	RAW TESTS	RAW POSITIVE	RAW %POSITIVE	TREATED TESTS	TREATED POSITIVE	TREATED %POSITIVE
BACTERIOLOGICAL	32	32	100	29	4	13
CHEMISTRY (FLD)	26	26	100	59	59	100
CHEMISTRY (LAB)	184	164	89	200	147	73
METALS	214	117	54	217	67	30
CHLOROAROMATICS	126	0	0	140	0	0
CHLOROPHENOLS	6	0	0	6	0	0
PAH	136	0	0	153	0	0
PESTICIDES & PCB	287	0	0	321	0	0
PHENOLICS	9	6	66	9	2	22
SPECIFIC PESTICIDES	28	0	0	28	0	0
VOLATILES	257	2	0	257	39	15
TOTAL	1305	347		1419	318	

NO HEALTH RELATED GUIDELINES WERE EXCEEDED

A POSITIVE VALUE DENOTES THAT THE RESULT IS GREATER THAN THE STATISTICAL LIMIT OF DETECTION AND IS QUANTIFIABLE
A '.' INDICATES THAT NO SAMPLE WAS TAKEN

91-02699/

DRINKING WATER SURVEILLANCE PROGRAM
AMHERSTBURG WATER TREATMENT PLANT
1988 ANNUAL REPORT

INTRODUCTION

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. Currently, 52 plants are being monitored.

The DWSP was initiated at the Amherstburg Water Treatment Plant in the summer of 1985 as part of a study on the St.Clair/Detroit River area. Annual reports were published in 1986 (ISBN 0-7729-2549-6) and 1987 (ISSN 839-900X).

This report contains information and results for 1988.

PLANT DESCRIPTION

The Amherstburg Water Treatment Plant is a conventional treatment plant which treats water from the Detroit River. The process consists of coagulation, flocculation, clarification (solids contact upflow clarifier), filtration, disinfection and

fluoridation. Powdered activated carbon is added for taste and odour control. The treatment plant has a design capacity of 18.18 x 1000 m^3/day and sample day flows ranging from 1.4 x 1000 m^3/day to 12.9 x 1000 m^3/day. The Amherstburg plant serves a population of approximately 15,900.

The plant location is shown in Figure 1. Plant process details, in a block schematic, are shown in Figure 2. General plant information is presented in Table 2.

METHODS

Water samples were obtained from two DWSP approved locations;

i) Plant Raw - The water originated from the lowlift discharge and was sampled through a copper sample line. The sample tap is located by the lowlift off the main header.

ii) Plant Treated - The water originated from the highlift discharge after addition of all treatment chemicals and was sampled through a copper sample line. The sample tap is located by the control panel.

Sample lines in the plant were flushed prior to sampling to ensure that the water obtained was indicative of its origin and not residual water standing in the sample line.

FIGURE 1

DRINKING WATER SURVEILLANCE PROGRAM

SITE LOCATION MAP

AMHERSTBURG WATER SUPPLY SYSTEM

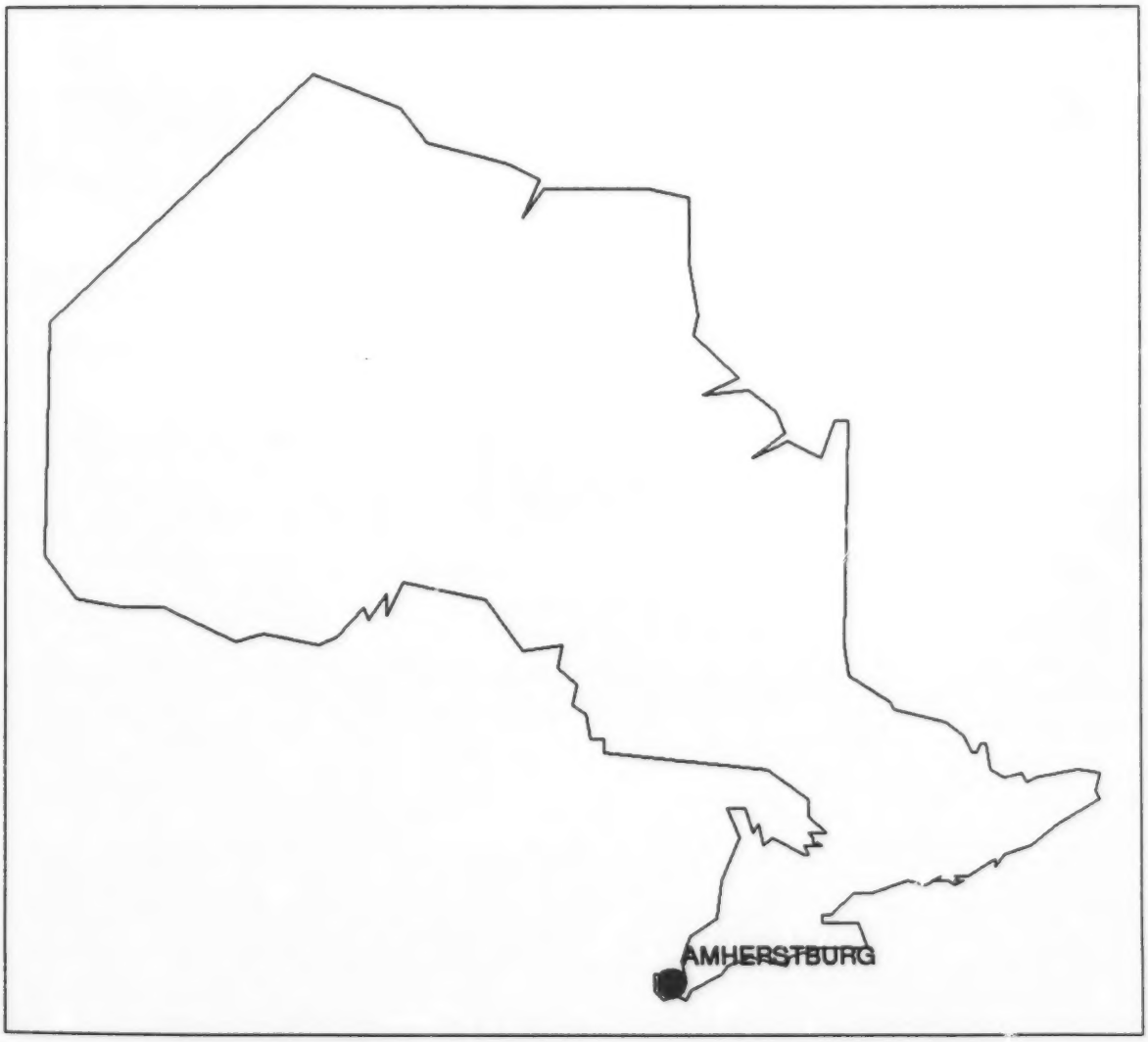

FIGURE 2

AMHERSTBURG WATER TREATMENT PLANT

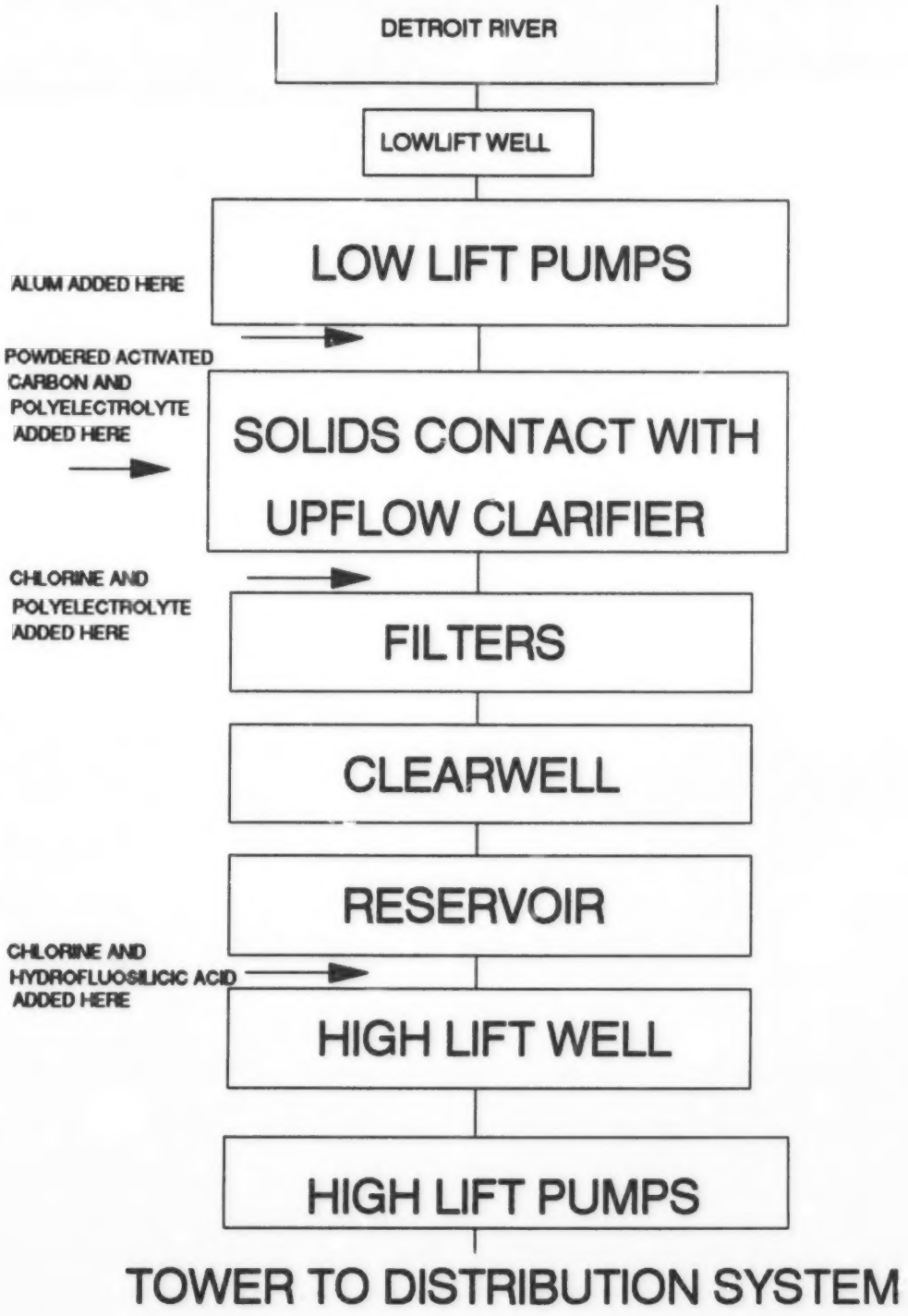

TABLE 2

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORT

GENERAL INFORMATION

AMHERSTBURG WATER TREATMENT PLANT

LOCATION:	415 FRONT RD NORTH AMHERSTBURG, ONTARIO N9V 2V5 (519-736-5447)
SOURCE:	RAW WATER SOURCE - DETROIT RIVER
DESIGN CAPACITY:	18.8 (1000 M^3/DAY)
OPERATION:	MINISTRY OF ENVIRONMENT
PLANT SUPERINTENDENT:	L. SINGER
MINISTRY REGION:	SOUTHWESTERN
DISTRICT OFFICER:	J. DRUMMOND

MUNICIPALITY SERVED	POPULATION
AMHERSTBURG	8,385
TOWNSHIP OF ANDERDON	3,822
TOWNSHIP OF MALDEN	2,000
TOWNSHIP OF COLCHESTER NORTH	1,944

Attempts were made to capture the same block of water at each sampling point by taking the retention time into consideration. The retention time was calculated by dividing the volume of water between the two sampling points by the sample day flow. For example, if it was determined that the retention time within the plant was five hours then there would be a five hour interval between the raw and treated sampling.

Stringent DWSP sampling protocols were followed to ensure that all samples were taken in a uniform manner.

Sample day flow, treatment chemical dosages and field measurements such as Turbidity, Chlorine Residuals, pH and Temperature were recorded on the day of sampling and were entered onto the DWSP data base as submitted.

RESULTS

Raw and Treated water from the Amherstburg Water Treatment Plant was sampled monthly beginning in April for approximately 160 parameters. Special Pesticides and Chlorophenols were analysed in November only.

Table 3 contains information on the sample day retention time, flow rate and treatment chemicals used and their associated dosages.

Table 4 is a summary break-down of the number of water samples analysed by parameter and by water type. The number of times that a positive or trace result was detected is also reported.

Positive denotes that the result is greater than the statistical limit of detection established by the Ministry of the Environment (MOE) laboratory staff and is quantifiable. Trace (<T) denotes that the level measured is greater than the lowest value detectable by the method but lies so close to the detection limit that it cannot be confidently quantified.

Table 5 presents the results for parameters detected on at least one occcasion.

Table 6 presents a list of all parameters analysed in DWSP.

Associated guidelines and detection limits are also supplied on tables 5 and 6. Parameters are listed alphabetically within each scan.

DISCUSSION

General

Water quality is judged by comparison with the Ontario Drinking Water Objectives (ODWO's) as defined in the 1984 publication (ISBN

0-7743-8985-0). The Province of Ontario has health related and aesthetic objectives for 49 parameters, these are currently under review. When an ODWO is not available guidelines/limits from other agencies are consulted. The Parameter Listing System (PALIS) recently published (ISBN 0-7729-4461-X) by the MOE catalogues and keeps current over 1750 guidelines for 650 parameters from agencies throughout the world.

Although some of the parameters measured on DWSP may be present in the raw and treated water as a result of pollution, many of the compounds detected are naturally occurring or are treatment by-products.

Plant operational personnel address occurrences of taste and odour or biological water quality parameters. The DWSP does not assess these aspects of the water supply.

As stated under Results, traces do not indicate quantifiable results as defined by established MOE laboratory analytical reporting protocols. While they can be useful in trend analysis or confirmation of the presence of a specific contaminant that is repeatedly detected at these levels, the occasional finding of a trace level of a contaminant is not considered to be significant. **DISCUSSION OF GUIDELINES AND LIMITS THEREFORE, IS ONLY CONDUCTED ON POSITIVE RESULTS.**

Bacteriology

Positive results for the Bacteriology scan were present four times in the treated water. All instances were Standard Plate Count and the results indicate control of microbiological quality in the treated water.

Guidelines for bacteriological sampling and testing of a supply are developed to maintain a proper supervision of its bacteriological quality; the routine monitoring program usually requires the taking of multiple samples in a given system. Routine bacteriological monitoring, as outlined in the ODWOs is carried out by the operating authority.

Inorganic and Physical Parameters

Laboratory and Field Chemistry

The results for the Laboratory Chemistry and Field Chemistry scans were below any applicable health related ODWOs.

It is desirable that the Temperature of drinking water be less than 15°C; the palatability of water is enhanced by its coolness. A temperature below 15°C will tend to reduce the growth of nuisance organisms and hence minimize associated taste, colour, odour and corrosion problems. The temperature of the treated water will

increase as a result of higher temperatures in the source water. The desired ODWO was exceeded four times in the treated water.

As part of the treatment process, Hydrofluosilicic acid is added to the treated water (Table 3). Where fluoridation is practised, the Fluoride concentration recommended in the ODWO is 1.2 mg/L, plus or minus 0.2 mg/L. Maintenance of this level was not been achieved as can be observed in the Fluoride levels in the treated water.

The ODWO indicate that a hardness level of between 80 and 100 mg/L as calcium carbonate for domestic waters, provides an acceptable balance between corrosion and incrustation. Water supplies with a hardness greater than 200 mg/L are considered poor, and would possess a tendency to form scale deposits and result in excessive soap consumption. Hardness values for the Amherstburg water ranged from 102 - 125 mg/L.

The Langelier Index is used extensively in estimating the corrosion potential of water. An increasingly negative index indicates the increasing possibility of corrosion. It is considered sound engineering practice to maintain a slightly positive Langelier Index. The Langelier Index for Amherstburg was negative for six of the nine samples submitted.

Metals

The results reported for the Metals scan were below any applicable health related ODWOs.

Many metals were present at lower levels in the treated water as compared to the raw water. This is a result of the treatment process. The addition of Alum as a coagulant to the raw water and the resulting coagulation/settling process has been shown to reduce the levels of most metals.

At present, there is no evidence that Aluminum is physiologically harmful and no health limit for drinking water has been specified. The measure of residual Aluminum in the treated water is important to indicate the efficiency of the treatment process. The ODWOs indicate that a useful guideline is to maintain a residual below 100 ug/L as Al in the water leaving the plant to avoid problems in the distribution system. Aluminum values exceeded the ODWO operational guideline three times in the treated water.

<u>Organic Parameters</u>

Chloroaromatics

The results of the Chloroaromatics scan showed that no Chloroaromatics were detected.

Chlorophenols

The results of the/ Chlorophenols scan showed that no Chlorophenols were detected.

Pesticides and PCB (Polychlorinated Biphenyl)

The results of the Pesticides and PCB scan showed that no PCBs were detected and that two pesticides were detected:

Alpha BHC

Lindane

There are several isomers of BHC (Benzene Hexachloride); gamma BHC is the active ingredient of the pesticide Lindane, while alpha BHC is the most predominant isomer found in surface waters of the Great Lakes Basin, as indicated in results from other water supplies on DWSP.

Alpha BHC was detected at trace levels, five times in the raw water.

Lindane was detected at trace levels, twice in the raw water.

Specific Pesticides

Results of the Specific Pesticides scan showed no Specific Pesticides were detected.

Phenolics

The maximum desirable concentration of phenolic substances in drinking water is 2.0 ug/L. This limit has been set primarily to prevent the occurrence of undesirable tastes and odours, particularly in chlorinated water. Phenolics were detected in the raw water at levels ranging from 1.0 - 4.6 ug/L and in the treated water from 1 - 2 ug/L. Phenolics were detected at trace levels, three times in the raw water and five times in the treated water. Phenolic compounds are present in the aquatic environment as a result of natural and/or industrial processes.

Polynuclear Aromatic Hydrocarbons (PAH)

The results of the PAH scan showed that no PAHs were detected.

Volatiles

The results of the Volatiles scan showed that five parameters other than Trihalomethanes(THMs) were detected:

Toluene
Ethylbenzene
Meta and Para-Xylene
Othro-Xylene
Tetrachloroethylene

Toluene was detected at a trace level, once in the treated water. The detection of toluene at low, trace levels is a laboratory artifact derived from the analytical methodology. The purge-and-

trap analytical technique depends on the purging of the volatile organics in the water sample with helium gas onto a Tenax trapping column. The volatile materials are subsequently thermally desorbed, separated and quantified. Tenax, a toluene-like polymeric material, tends to decompose sporadically upon heating into toluene and other aromatic componenets (ethylbenzene and xylene) giving instrument blanks in the order of 0.05 ug/L.

Ethylbenzene was detected at trace levels, three times in the treated water.

Meta and Para-Xylene (M-Xylene and P-Xylene) are analysed as one parameter and are reported as Meta-Xylene. Meta-Xylene was detected at a trace level, in one raw water sample.

Ortho-Xylene (O-Xylene) was detected at a trace level, in one raw water sample.

The volatiles listed above are typically found on an occasional basis at other water supplies included on the DWSP usually at trace levels.

Tetrachloroethylene (T-Chloroethylene) was detected at 2.0 ug/L in the November raw water sample but not in the corresponding treated water sample. The World Health Organization Tentative Guideline Value for Tetrachloroethylene in drinking water is 10.0 ug/L. It

was also detected at trace levels, five times in the raw water and six times in the treated water.

THMs are acknowledged to be produced during the water treatment process and will always occur in chlorinated surface waters. THMs are comprised of Chloroform, Chlorodibromomethane and Dichlorobromomethane. Bromoform occurrs occasionally. Results are reported for the individual compounds as well as for total THMs.

Chloroform, Chlorodibromomethane, Dichlorobromomethane, Bromoform and Total THMs were detected in all treated water samples. All Total THM occurrences ranging from 25.5 to 43.6 ug/L were well below the ODWO of 350 ug/L.

CONCLUSIONS

The Amherstburg Water Treatment plant for the sample year of 1988 produced good quality water at the plant, results were consistent with those obtained 1986 and 1987.

No health related guidelines, for organic or inorganic parameters, were exceeded during 1988.

TABLE 3

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS SAMPLE DAY CONDITIONS FOR 1988

	SAMPLE DAY CONDITIONS		TREATMENT CHEMICAL DOSAGES (MG/L)							
			PRE-CHLORINATION	COAGULATION		COAGULATION AID	ADSORPTION	FILTER AID	POST-CHLORINATION	FLUORIDATION
			CHLORINE	ALUM LIQUID	POLYALUMINUM SULPHATE	POLYELECTROLYTE	ACTIVATED CARBON POWDER	POLYELECTROLYTE	CHLORINE	HYDROFLUOSILICIC ACID
DATE	RETENTION TIME(HRS)	FLOW (1000M3)								
APR 20	48.0	5.3	1.74	27.60	.	.	3.23	.04	.45	.
APR 28	24.0	2.7	.71	.	18.34	.03	2.29	.	.43	.85
MAY 18	46.5	10.6	1.69	.	15.17	.	2.70	.03	.61	1.06
JUN 20	48.0	12.9	1.30	21.50	.	1.30	2.30	.02	.42	.72
JUL 20	48.0	7.7	1.76	35.60	.	.04	7.50	.14	.47	1.07
AUG 17	48.0	1.7	1.60	.	26.90	.13	5.60	.03	.47	.96
SEP 22	48.0	1.4	1.70	21.40	.	.13	5.80	.04	.55	.91
OCT 19	48.0	6.0	1.94	.	19.94	.17	5.51	.04	1.94	.75
NOV 23	48.0	6.1	1.58	.	25.70	.15	5.11	.04	.41	.99
DEC 12	48.0	6.1	1.30	.	35.82	.17	5.60	.05	.55	.70

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW			TREATED		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
BACTERIOLOGICAL	FECAL COLIFORM MF	9	9	0	.	.	.
	STANDRD PLATE CNT MF	5	5	0	8	4	0
	P/A BOTTLE	.	.	.	5	0	0
	TOTAL COLIFORM MF	9	9	0	8	0	0
	T COLIFORM BCKGRD MF	9	9	0	8	0	0
*TOTAL SCAN BACTERIOLOGICAL		32	32	0	29	4	0
*TOTAL GROUP BACTERIOLOGICAL		32	32	0	29	4	0
CHEMISTRY (FLD)	FLD CHLORINE (COMB)	.	.	.	10	10	0
	FLD CHLORINE FREE	.	.	.	10	10	0
	FLD CHLORINE (TOTAL)	.	.	.	10	10	0
	FLD PH	8	8	0	10	10	0
	FLD TEMPERATURE	9	9	0	10	10	0
	FLD TURBIDITY	9	9	0	9	9	0
*TOTAL SCAN CHEMISTRY (FLD)		26	26	0	59	59	0
CHEMISTRY (LAB)	ALKALINITY	9	9	0	10	10	0
	CALCIUM	9	9	0	10	10	0
	CYANIDE	9	0	0	10	0	0
	CHLORIDE	9	9	0	10	10	0
	COLOUR	9	3	6	10	1	3

TABLE 3

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS SAMPLE DAY CONDITIONS FOR 1988

SAMPLE DAY CONDITIONS			TREATMENT CHEMICAL DOSAGES (MG/L)							
			PRE-CHLORINATION	COAGULATION		COAGULATION AID	ADSORPTION	FILTER AID	POST-CHLORINATION	FLUORIDATION
			CHLORINE	ALUM LIQUID	POLYALUMINUM SULPHATE	POLYELECTROLYTE	ACTIVATED CARBON POWDER	POLYELECTROLYTE	CHLORINE	HYDROFLUOSILICIC ACID
DATE	RETENTION TIME(HRS)	FLOW (1000M3)								
APR 20	48.0	5.3	1.74	27.60	.	.	3.23	.04	.45	.
APR 28	24.0	2.7	.71	.	18.34	.03	2.29	.	.43	.85
MAY 18	46.5	10.6	1.69	.	15.17	.	2.70	.03	.61	1.06
JUN 20	48.0	12.9	1.30	21.50	.	1.30	2.30	.02	.42	.72
JUL 20	48.0	7.7	1.76	35.60	.	.04	7.50	.14	.47	1.07
AUG 17	48.0	1.7	1.60	.	26.90	.13	5.60	.03	.47	.96
SEP 22	48.0	1.4	1.70	21.40	.	.13	5.80	.04	.55	.91
OCT 19	48.0	6.0	1.94	.	19.94	.17	5.51	.04	1.94	.75
NOV 23	48.0	6.1	1.58	.	25.70	.15	5.11	.04	.41	.99
DEC 12	48.0	6.1	1.30	.	35.82	.17	5.60	.05	.55	.70

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE
BACTERIOLOGICAL	FECAL COLIFORM MF	9	9	0	.	.	.
	STANDRD PLATE CNT MF	5	5	0	8	4	0
	P/A BOTTLE	.	.	.	5	0	0
	TOTAL COLIFORM MF	9	9	0	8	0	0
	T COLIFORM BCKGRD MF	9	9	0	8	0	0
*TOTAL SCAN BACTERIOLOGICAL		32	32	0	29	4	0
*TOTAL GROUP BACTERIOLOGICAL		32	32	0	29	4	0
CHEMISTRY (FLD)	FLD CHLORINE (COMB)	.	.	.	10	10	0
	FLD CHLORINE FREE	.	.	.	10	10	0
	FLD CHLORINE (TOTAL)	.	.	.	10	10	0
	FLD PH	8	8	0	10	10	0
	FLD TEMPERATURE	9	9	0	10	10	0
	FLD TURBIDITY	9	9	0	9	9	0
*TOTAL SCAN CHEMISTRY (FLD)		26	26	0	59	59	0
CHEMISTRY (LAB)	ALKALINITY	9	9	0	10	10	0
	CALCIUM	9	9	0	10	10	0
	CYANIDE	9	0	0	10	0	0
	CHLORIDE	9	9	0	10	10	0
	COLOUR	9	3	6	10	1	3

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE
CHEMISTRY (LAB)	CONDUCTIVITY	9	9	0	10	10	0
	FLUORIDE	9	9	0	10	10	0
	HARDNESS	9	9	0	10	10	0
	IONCAL	9	6	0	10	6	0
	LANGELIERS INDEX	9	9	0	4	4	0
	MAGNESIUM	9	9	0	10	10	0
	SODIUM	9	9	0	10	10	0
	AMMONIUM TOTAL	9	8	0	10	6	3
	NITRITE	9	9	0	10	1	7
	TOTAL NITRATES	9	9	0	10	10	0
	NITROGEN TOT KJELD	8	8	0	10	7	3
	PH	9	9	0	10	10	0
	PHOSPHORUS FIL REACT	9	8	1	10	9	1
	PHOSPHORUS TOTAL	8	8	0	10	1	9
	SULPHATE	6	6	0	6	6	0
	TURBIDITY	9	9	0	10	6	4
*TOTAL SCAN CHEMISTRY (LAB)		184	164	7	200	147	30
METALS	SILVER	9	0	0	9	0	5
	ALUMINUM	9	9	0	9	9	0
	ARSENIC	9	0	9	9	0	9
	BARIUM	9	9	0	9	9	0
	BORON	9	5	4	9	4	5

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG

SUMMARY TABLE OF RESULTS (1988)

		RAW			TREATED		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
METALS	BERYLLIUM	9	0	6	9	0	5
	CADMIUM	9	0	2	9	0	1
	COBALT	9	0	9	9	0	9
	CHROMIUM	9	7	2	9	4	3
	COPPER	9	9	0	9	0	9
	IRON	9	9	0	9	0	2
	MERCURY	7	0	4	10	2	4
	MANGANESE	9	9	0	9	0	9
	MOLYBDENUM	9	4	5	9	9	0
	NICKEL	9	0	8	9	0	4
	LEAD	9	9	0	9	0	7
	ANTIMONY	9	4	5	9	3	6
	SELENIUM	9	0	5	9	0	8
	STRONTIUM	9	9	0	9	9	0
	TITANIUM	9	9	0	9	9	0
	THALLIUM	9	0	3	9	0	2
	URANIUM	9	9	0	9	1	8
	VANADIUM	9	7	2	9	2	7
	ZINC	9	9	0	9	6	3
*TOTAL SCAN METALS		214	117	64	217	67	106
*TOTAL GROUP INORGANIC & PHYSICAL		424	307	71	476	273	136
CHLOROAROMATICS	HEXACHLOROBUTADIENE	9	0	0	10	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW			TREATED		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
CHLOROAROMATICS	123 TRICHLOROBENZENE	9	0	0	10	0	0
	1234 T-CHLOROBENZENE	9	0	0	10	0	0
	1235 T-CHLOROBENZENE	9	0	0	10	0	0
	124 TRICHLOROBENZENE	9	0	0	10	0	0
	1245 T-CHLOROBENZENE	9	0	0	10	0	0
	135 TRICHLOROBENZENE	9	0	0	10	0	0
	HCB	9	0	0	10	0	0
	HEXACHLOROETHANE	9	0	0	10	0	0
	OCTACHLOROSTYRENE	9	0	0	10	0	0
	PENTACHLOROBENZENE	9	0	0	10	0	0
	236 TRICHLOROTOLUENE	9	0	0	10	0	0
	245 TRICHLOROTOLUENE	9	0	0	10	0	0
	26A TRICHLOROTOLUENE	9	0	0	10	0	0
*TOTAL SCAN CHLOROAROMATICS		126	0	0	140	0	0
CHLOROPHENOLS	234 TRICHLOROPHENOL	1	0	0	1	0	0
	2345 T-CHLOROPHENOL	1	0	0	1	0	0
	2356 T-CHLOROPHENOL	1	0	0	1	0	0
	245-TRICHLOROPHENOL	1	0	0	1	0	0
	246-TRICHLOROPHENOL	1	0	0	1	0	0
	PENTACHLOROPHENOL	1	0	0	1	0	0
*TOTAL SCAN CHLOROPHENOLS		6	0	0	6	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW			TREATED		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PAH	PHENANTHRENE	8	0	0	9	0	0
	ANTHRACENE	8	0	0	9	0	0
	FLUORANTHENE	8	0	0	9	0	0
	PYRENE	8	0	0	9	0	0
	BENZO(A)ANTHRACENE	8	0	0	9	0	0
	CHRYSENE	8	0	0	9	0	0
	DIMETH. BENZ(A)ANTHR	8	0	0	9	0	0
	BENZO(E) PYRENE	8	0	0	9	0	0
	BENZO(J) FLUORANTHEN	0	0	0	0	0	0
	BENZO(B) FLUORANTHEN	8	0	0	9	0	0
	PERYLENE	8	0	0	9	0	0
	BENZO(K) FLUORANTHEN	8	0	0	9	0	0
	BENZO(A) PYRENE	8	0	0	9	0	0
	BENZO(G,H,I) PERYLEN	8	0	0	9	0	0
	DIBENZO(A,H) ANTHRAC	8	0	0	9	0	0
	INDENO(1,2,3-C,D) PY	8	0	0	9	0	0
	BENZO(B) CHRYSENE	8	0	0	9	0	0
	ANTHANTHRENE	0	0	0	0	0	0
	CORONENE	8	0	0	9	0	0
*TOTAL SCAN PAH		136	0	0	153	0	0
PESTICIDES & PCB	ALDRIN	9	0	0	10	0	0
	ALPHA BHC	9	0	5	10	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW			TREATED		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PESTICIDES & PCB	BETA BHC	9	0	0	10	0	0
	LINDANE	9	0	2	10	0	0
	ALPHA CHLORDANE	9	0	0	10	0	0
	GAMMA CHLORDANE	9	0	0	10	0	0
	DIELDRIN	9	0	0	10	0	0
	METHOXYCHLOR	9	0	0	10	0	0
	ENDOSULFAN 1	9	0	0	10	0	0
	ENDOSULFAN II	9	0	0	10	0	0
	ENDRIN	9	0	0	10	0	0
	ENDOSULFAN SULPHATE	9	0	0	10	0	0
	HEPTACHLOR EPOXIDE	9	0	0	10	0	0
	HEPTACHLOR	9	0	0	10	0	0
	MIREX	9	0	0	10	0	0
	OXYCHLORDANE	9	0	0	10	0	0
	OPDDT	9	0	0	10	0	0
	PCB	9	0	0	10	0	0
	DDD	9	0	0	10	0	0
	PPDDE	9	0	0	10	0	0
	PPDDT	9	0	0	10	0	0
	AMETRINE	8	0	0	9	0	0
	ATRAZINE	8	0	0	9	0	0
	ATRATONE	8	0	0	9	0	0
	CYANAZINE	8	0	0	9	0	0
	DES ETHYL ATRAZINE	5	0	0	6	0	0
	DES ETHYL SIMAZINE	5	0	0	6	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE
PESTICIDES & PCB	PROMETONE	8	0	0	9	0	0
	PROPAZINE	8	0	0	9	0	0
	PROMETRYNE	8	0	0	9	0	0
	METRIBUZIN	8	0	0	9	0	0
	SIMAZINE	8	0	0	9	0	0
	ALACHLOR	8	0	0	9	0	0
	METOLACHLOR	8	0	0	9	0	0
*TOTAL SCAN PESTICIDES & PCB		287	0	7	321	0	0
PHENOLICS	PHENOLICS	9	6	3	9	2	5
*TOTAL SCAN PHENOLICS		9	6	3	9	2	5
SPECIFIC PESTICIDES	TOXAPHENE	0	0	0	0	0	0
	2,4,5-T	1	0	0	1	0	0
	2,4-D	1	0	0	1	0	0
	24DCHLRPHENOXYBUTYRC	1	0	0	1	0	0
	2,4 D PROPIONIC ACID	1	0	0	1	0	0
	DICAMBA	1	0	0	1	0	0
	PICHLORAM	0	0	0	0	0	0
	SILVEX	1	0	0	1	0	0
	DIAZINON	1	0	0	1	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW			TREATED		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
SPECIFIC PESTICIDES	DICHLOROVOS	1	0	0	1	0	0
	CHLORPYRIFOS	1	0	0	1	0	0
	ETHION	1	0	0	1	0	0
	AZINPHOS-METHYL	0	0	0	0	0	0
	MALATHION	1	0	0	1	0	0
	MEVINPHOS	1	0	0	1	0	0
	METHYL PARATHION	1	0	0	1	0	0
	METHYLTRITHION	1	0	0	1	0	0
	PARATHION	1	0	0	1	0	0
	PHORATE	1	0	0	1	0	0
	RELDAN	1	0	0	1	0	0
	RONNEL	1	0	0	1	0	0
	AMINOCARB	0	0	0	0	0	0
	BENONYL	1	0	0	1	0	0
	BUX	1	0	0	1	0	0
	CARBOFURAN	1	0	0	1	0	0
	CICP	1	0	0	1	0	0
	DIALLATE	1	0	0	1	0	0
	EPTAM	1	0	0	1	0	0
	IPC	1	0	0	1	0	0
	PROPOXUR	1	0	0	1	0	0
	CARBARYL	1	0	0	1	0	0
	BUTYLATE	1	0	0	1	0	0
*TOTAL SCAN SPECIFIC PESTICIDES		28	0	0	28	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE
VOLATILES	BENZENE	9	0	0	9	0	0
	TOLUENE	9	0	0	9	0	2
	ETHYLBENZENE	9	0	0	9	0	3
	P-XYLENE	9	1	0	9	1	0
	M-XYLENE	9	0	1	9	0	1
	O-XYLENE	9	0	1	9	0	1
	STYRENE	3	0	0	3	0	0
	1,1 DICHLOROETHYLENE	9	0	0	9	0	0
	METHYLENE CHLORIDE	9	0	0	9	1	0
	T1,2DICHLOROETHYLENE	9	0	0	9	1	0
	1,1 DICHLOROETHANE	9	0	0	9	0	0
	CHLOROFORM	9	0	2	9	9	0
	111, TRICHLOROETHANE	9	0	0	9	0	1
	1,2 DICHLOROETHANE	9	0	0	9	0	0
	CARBON TETRACHLORIDE	9	0	0	9	0	0
	1,2 DICHLOROPROPANE	9	0	0	9	0	0
	TRICHLOROETHYLENE	9	0	0	9	0	0
	DICHLOROBROMOMETHANE	9	0	0	9	9	0
	112 TRICHLOROETHANE	9	0	0	9	0	0
	CHLORODIBROMOMETHANE	9	0	0	9	9	0
	T-CHLOROETHYLENE	9	1	5	9	0	6
	BROMOFORM	9	0	0	9	0	9
	1122 T-CHLOROETHANE	9	0	0	9	0	0
	CHLOROBENZENE	9	0	0	9	0	0
	1,4 DICHLOROBENZENE	9	0	0	9	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW			TREATED		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
VOLATILES	1,3 DICHLOROBENZENE	9	0	0	9	0	0
	1,2 DICHLOROBENZENE	9	0	0	9	0	0
	TRIFLUOROCHLOROTOLUE	2	0	0	2	0	0
	ETHLYENE DIBROMIDE	9	0	0	9	0	0
	TOTL TRIHALOMETHANES	9	0	0	9	9	0
*TOTAL SCAN VOLATILES		257	2	9	257	39	23
*TOTAL GROUP ORGANIC		849	8	19	914	41	28
TOTAL		1305	347	90	1419	318	164

KEY TO TABLE 5 and 6

A ONTARIO DRINKING WATER OBJECTIVES (ODWO)

1. Maximum Acceptable Concentration (MAC)

1+. MAC for Total Trihalomethanes

1*. MAC for Bacteriological Analyses
Poor water quality is indicated when :
- total coliform counts > 0 < 5
- P/A Bottle Test is present after 48 hours
- Aeromonas organisms are detected in more than 25% of samples in a single submission or in successive submissions from the same sampling site
- Pseudomonas Aeruginosa, Staphylococcus Aureus and members of the Fecal Streptococcus group should not be detected in any sample
- Standard Plate Count should not exceed 500 organisms per ml at 35 ^{0}C within 48 hours

2. Interim Maximum Acceptable Concentration (IMAC)
3. Maximum Desirable Concentration (MDC)
4. Aesthetic or Recommended Operational Guideline
- hardness levels between 80 and 100 mg/L as calcium carbonate are considered to provide an acceptable balance between corrosion and incrustation, water supplies with a hardness >200 mg/L are considered poor and those in excess of 500 mg/L are unacceptable.

B HEALTH & WELFARE CANADA (H&W)

1. Maximum Acceptable Concentration (MAC)
2. Proposed MAC
3. Interim MAC
4. Aesthetic Objective (AO) (for xylenes, the AO is a total)

C WORLD HEALTH ORGANIZATION (WHO)

1. Guideline Value (GV)
2. Tentative GV
3. Aesthetic GV

D US ENVIRONMENTAL PROTECTION AGENCY (EPA)

1. Maximum Contaminant Level (MCL)
2. Suggested No-Adverse Effect Level (SNAEL)
3. Lifetime Health Advisory
4. EPA Ambient Water Quality Criteria

F EUROPEAN ECONOMIC COMMUNITY (EEC)

1. Health Related Guideline Level
2. Aesthetic Guideline Level
3. Maximum Admissable Concentration (MADC)

G CALIFORNIA STATE DEPARTMENT OF HEALTH-GUIDELINE VALUE

H USSR MAXIMUM PERMISSIBLE CONCENTRATION

I NEW YORK STATE AMBIENT WATER GUIDELINE

N/A NONE AVAILABLE

INTERPRETATION OF DATA

The interpretation of analytical results that are obtained from measurements near the limit of detection of the measurement process is subject to greater uncertainty than those at higher concentrations. The principle areas of concern relate to whether the substance has actually been detected, whether it has been properly identified, and whether it is an artifact of the measurement process. In other words, false positives can be caused by the instrumentation or the test procedures used, when in fact these compounds are not present in the sample.

There are several methods to treat data from such measurements:
1. Exclude the low-level data because of this uncertainty factor. However, studies of long-term environmental trends and modelling may be adversely affected by exclusion of such data.
2. Qualify these data so the user is aware of the greater uncertainty associated with their use.

For the Drinking Water Surveillance Program, measurements near the limit of detection of the measurement process are reported qualified by the code "<T". Results quantified by "W" indicate a zero measurement. These results are reported for purposes of modelling and long-term trend analysis and no significance should be attributed to a single determination of a substance below "T" (a single determination may well be a false positive). Repeat analysis or additional data are needed before it can be stated with certainty that the substance in question was truly present. On the other hand, it is less likely that repeated detection of a substance at or near the limit of detection at a specific location is solely due to an artifact in the measurement system, and more likely represents a true positive. However the average of such data is still only an estimate of the amount of substance present subject to the possible biases of the method used.

LABORATORY RESULTS, REMARK DESCRIPTIONS

.	No Sample Taken
BDL	Below Minimum Measurable Amount
<T	Greater Than Detection Limit But Not Confident (SEE INTERPRETATION OF RESULTS ABOVE)
>	Results Are Greater Than The Upper Limit
<=>	Approximate Result
!AW	No Data: Analysis Withdrawn
!CR	No Data: Could Not Confirm By Reanalysis
!CS	No Data: Contamination Suspected
!IL	No Data: Sample Incorrectly Labelled
!IS	No Data: Insufficient Sample
!LA	No Data: Laboratory Accident

!LD	No Data: Test Queued After Sample Discarded
!NA	No Data: No Authorization To Perform Reanalysis
!NP	No Data: No Procedure
!NR	No Data: Sample Not Received
!OP	No Data: Obscured Plate
!QU	No Data: Quality Control Unacceptable
!PE	No Data: Procedural Error - Sample Discarded
!PH	No Data: Sample pH Outside Valid Range
!RE	No Data: Received Empty
!RO	No Data: See Attached Report (no numeric results)
!SM	No Data: Sample Missing
!SS	No Data: Send Separate Sample Properly Preserved
!UI	No Data: Indeterminant Interference
!TX	No Data: Time Expired
A3C	Approximate, Total Count Exceeded 300 Colonies
APL	Additional Peak, Large, Not Priority Pollutant
APS	Additional Peak, Less Than, Not Priority Pollutant
CIC	Possible Contamination, Improper Cap
CRO	Calculated Result Only
PPS	Test Performed On Preserved Sample
RMP	P and M-Xylene Not Separated
RRV	Rerun Verification
RVU	Reported Value Unusual
SPS	Several Peaks, Small, Not Priority Pollutant
UAL	Unreliable: Sample Age Exceeds Normal Limit
UCR	Unreliable: Could Not Confirm By Reanalysis
UCS	Unreliable: Contamination Suspected
UIN	Unreliable: Indeterminant Interference
XP	Positive After X Number of Hours
T# (T06)	Result Taken After # Hours

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
BACTERIOLOGICAL			
FECAL COLIFORM MF (CT/100ML)		DET'N LIMIT = 0	GUIDELINE = 0 (A1)
APR	134	.	
MAY	103	.	
JUN	26	.	
JUL	188	.	
AUG	72	.	
SEP	292	.	
OCT	872 A>	.	
NOV	4800 T24	.	
DEC	630 T24	.	
STANDRD PLATE CNT MF (CT/ML)		DET'N LIMIT = 0	GUIDELINE = 500/ML (A1)
APR	2400 >	12	
MAY	840	0	
JUN	2400 >	18	
JUL	21000	ILA	
AUG	2100	3	
SEP	.	0 <=>	
OCT	.	1 <=>	
NOV	.	34 T48	
DEC	.	1 <=>	
P/A BOTTLE ( )		DET'N LIMIT = 0	GUIDELINE = 0 (A1*)
APR	.	0	
MAY	.	0	
JUN	.	0	
JUL	.	0	
AUG	.	0	
TOTAL COLIFORM MF (CT/100ML)		DET'N LIMIT = 0	GUIDELINE = 5/100ML(A1)
APR	18000 A3C	0	
MAY	3800	0	
JUN	1100	0	
JUL	4800 A3C	ILA	
AUG	1600	0	
SEP	3000 >	0 T24	
OCT	12200 A3C	0 T24	
NOV	6900 T24	0 T48	
DEC	6600 A3C	0	
T COLIFORM BCKGRD MF (CT/100ML)		DET'N LIMIT = 0	GUIDELINE = N/A

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
APR	65000	0	
MAY	7600	0	
JUN	6300	0	
JUL	60000	ILA	
AUG	12800	0	
SEP	26000 A3C	0 T24	
OCT	40000 >	0 T24	
NOV	4600 T24	0 T48	
DEC	42000 A3C	0	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
CHEMISTRY (FLD)			
FLD CHLORINE (COMB) ( )		DET'N LIMIT = N/A	GUIDELINE = N/A
APR	.	.240	
MAY	.	.220	
JUN	.	.250	
JUL	.	.200	
AUG	.	.120	
SEP	.	.220	
OCT	.	.210	
NOV	.	.300	
DEC	.	.220	
FLD CHLORINE FREE ( )		DET'N LIMIT = N/A	GUIDELINE = N/A
APR	.	.830	
MAY	.	.760	
JUN	.	.830	
JUL	.	.800	
AUG	.	.880	
SEP	.	.780	
OCT	.	.740	
NOV	.	.780	
DEC	.	.800	
FLD CHLORINE (TOTAL) ( )		DET'N LIMIT = N/A	GUIDELINE = N/A
APR	.	1.070	
MAY	.	.980	
JUN	.	1.080	
JUL	.	1.000	
AUG	.	1.000	
SEP	.	1.000	
OCT	.	.950	
NOV	.	1.080	
DEC	.	1.020	
FLD PH (DIMNSLESS)		DET'N LIMIT = N/A	GUIDELINE = 6.5-8.5(A4)
APR	8.200	7.200	
MAY	8.200	7.150	
JUN	8.100	7.060	
JUL	8.100	6.900	
AUG	8.200	7.000	
SEP	8.200	7.030	
OCT	8.300	7.000	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
NOV	8.100	7.150	
DEC	.	7.100	
FLD TEMPERATURE (DEG.C)		DET'N LIMIT = N/A	GUIDELINE = 15 (A1)
APR	10.000	9.000	
MAY	13.000	14.500	
JUN	22.000	22.000	
JUL	26.000	25.000	
AUG	27.000	27.000	
SEP	19.000	20.000	
OCT	10.000	12.000	
NOV	6.000	8.000	
DEC	2.000	2.000	
FLD TURBIDITY (FTU)		DET'N LIMIT = N/A	GUIDELINE = 1.0 (A1)
APR	7.500	.080	
MAY	8.200	.060	
JUN	11.000	.100	
JUL	12.000	.070	
AUG	8.400	.080	
SEP	9.000	.090	
OCT	8.500	.110	
NOV	42.000	.	
DEC	28.000	.070	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
CHEMISTRY (LAB)			
ALKALINITY (MG/L)		DET'N LIMIT = .200	GUIDELINE = 30-500 (A4)
APR	133.500	89.000	
MAY	89.700	81.500	
JUN	93.000	78.300	
JUL	86.900	70.700	
AUG	86.500	72.300	
SEP	87.700	73.500	
OCT	89.900	84.100	
NOV	88.500	79.800	
DEC	94.100	87.200	
CALCIUM (MG/L)		DET'N LIMIT = .100	GUIDELINE = 100 (F2)
APR	31.600	32.400	
MAY	28.800	29.400	
JUN	30.000	28.400	
JUL	29.200	31.400	
AUG	29.600	29.000	
SEP	30.400	30.200	
OCT	28.600	29.000	
NOV	35.200	32.200	
DEC	34.400	35.800	
CHLORIDE (MG/L)		DET'N LIMIT = .200	GUIDELINE = 250 (A3)
APR	10.300	14.500	
MAY	9.200	11.900	
JUN	10.100	12.300	
JUL	9.200	10.300	
AUG	12.800	11.700	
SEP	10.700	12.200	
OCT	12.300	14.300	
NOV	14.100	14.400	
DEC	12.900	16.000	
COLOUR (HZU)		DET'N LIMIT = .5	GUIDELINE = 5.0 (A3)
APR	2.000 <T	.500 <T	
MAY	1.500 <T	BDL	
JUN	1.500 <T	.500 <T	
JUL	.500 <T	.500	
AUG	2.500	BDL	
SEP	1.000 <T	BDL	
OCT	2.500	.500 <T	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
NOV	4.000	BDL	
DEC	1.500 <T	BDL	
CONDUCTIVITY (UMHO/CM)		DET'N LIMIT = 1	GUIDELINE = 400 (F2)
APR	260	274	
MAY	241	247	
JUN	250	256	
JUL	237	246	
AUG	250	248	
SEP	241	249	
OCT	251	255	
NOV	268	270	
DEC	267	284	
FLUORIDE (MG/L)		DET'N LIMIT = .01	GUIDELINE = 2.400 (A1)
APR	.110	1.020	
MAY	.090	1.190	
JUN	.090	.870	
JUL	.090	1.160	
AUG	.080	1.120	
SEP	.100	1.420	
OCT	.100	.880	
NOV	.100	1.120	
DEC	.100	.920	
HARDNESS (MG/L)		DET'N LIMIT = .500	GUIDELINE = 80-100 (A4)
APR	112.000	117.000	
MAY	102.000	104.000	
JUN	107.000	102.000	
JUL	105.000	112.000	
AUG	106.000	105.000	
SEP	108.000	107.000	
OCT	104.000	104.000	
NOV	125.000	115.000	
DEC	122.000	125.000	
IONCAL (DIMNSLESS)		DET'N LIMIT = N/A	GUIDELINE = N/A
APR	.000 NAF	.000 NAF	
MAY	.000 NAF	.000 NAF	
JUN	.000 NAF	.000 NAF	
JUL	.821	3.143	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
AUG	.385	.287	
SEP	.941	1.790	
OCT	5.038	5.473	
NOV	4.650	.081	
DEC	.300	.726	
LANGELIERS INDEX (DMNSLESS)		DET'N LIMIT = N/A	GUIDELINE = N/A
APR	.502 MAF	.101 MAF	
MAY	.096 MAF	.029 MAF	
JUN	.226 MAF	.025 MAF	
JUL	.040	-.552	
AUG	.309	-.037	
SEP	.250	-.253	
OCT	.230	-.004	
NOV	.117	-.167	
DEC	.264	-.078	
MAGNESIUM (MG/L)		DET'N LIMIT = .050	GUIDELINE = 30 (F2)
APR	8.000	8.700	
MAY	7.300	7.300	
JUN	7.700	7.500	
JUL	7.800	8.000	
AUG	7.900	8.000	
SEP	7.800	7.600	
OCT	7.900	7.500	
NOV	8.500	8.400	
DEC	8.600	8.700	
SODIUM (MG/L)		DET'N LIMIT = .200	GUIDELINE = 200 (C3)
APR	5.600	7.400	
MAY	5.800	6.400	
JUN	5.800	6.200	
JUL	5.800	5.400	
AUG	8.000	6.200	
SEP	6.800	6.800	
OCT	7.600	7.800	
NOV	7.800	7.200	
DEC	7.200	8.000	
AMMONIUM TOTAL (MG/L)		DET'N LIMIT = 0.002	GUIDELINE = .05 (F2)
APR	.020	BDL	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
NITRITE (MG/L)		DET'N LIMIT = 0.001	GUIDELINE = 1.000 (A1)
MAY	.034	.014	
JUN	.018	.006 <T	
JUL	.026	.004 <T	
AUG	BDL	.002 <T	
SEP	.032	.010	
OCT	.034	.006	
NOV	.014	.012	
DEC	.026	.010	
NITRITE (MG/L)		DET'N LIMIT = 0.001	GUIDELINE = 1.000 (A1)
APR	.006	BDL	
MAY	.019	.001 <T	
JUN	.038	.001 <T	
JUL	.006	BDL	
AUG	.033	.001 <T	
SEP	.007	.001 <T	
OCT	.014	.003	
NOV	.024	.001 <T	
DEC	.012	.001 <T	
TOTAL NITRATES (MG/L)		DET'N LIMIT = .020	GUIDELINE = 10.000 (A1)
APR	.520	.570	
MAY	.335	.305	
JUN	.305	.255	
JUL	.270	.305	
AUG	.285	.280	
SEP	.220	.235	
OCT	.215	.240	
NOV	.945	1.020	
DEC	1.050	1.180	
NITROGEN TOT KJELD (MG/L)		DET'N LIMIT = .020	GUIDELINE = N/A
APR	ILA	.110	
MAY	.200	.100	
JUN	.220	.090 <T	
JUL	.240	.090 <T	
AUG	.210	.100	
SEP	.260	.120	
OCT	.210	.100	
NOV	.210	.070 <T	
DEC	.320	.130	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
PH (DIMNSLESS)		DET'N LIMIT = N/A	GUIDELINE = 6.5-8.5(A4)
APR	8.300	8.070	
MAY	8.100	8.010	
JUN	8.200	8.100	
JUL	8.050	7.520	
AUG	8.320	8.060	
SEP	8.240	7.820	
OCT	8.240	8.030	
NOV	8.050	7.850	
DEC	8.180	7.860	
PHOSPHORUS FIL REACT (MG/L)		DET'N LIMIT = .0005	GUIDELINE = N/A
APR	.002	.002	
MAY	.003	.003	
JUN	.005	.004	
JUL	.001 <T	.005	
AUG	.006	.007	
SEP	.003	.007	
OCT	.001	.004	
NOV	.007	.005	
DEC	.004	.006	
PHOSPHORUS TOTAL (MG/L)		DET'N LIMIT = .002	GUIDELINE = .40 (F2)
APR	ILA	.004 <T	
MAY	.016	.004 <T	
JUN	.021	.006 <T	
JUL	.024	.007 <T	
AUG	.018	.002 <T	
SEP	.027	.013	
OCT	.013	.007 <T	
NOV	.032	.006 <T	
DEC	.026	.007 <T	
SULPHATE ( )		DET'N LIMIT = .200	GUIDELINE = 500. (A3)
JUL	17.100	31.700	
AUG	17.900	27.500	
SEP	17.400	26.700	
OCT	17.830	20.820	
NOV	21.000	25.930	
DEC	20.500	26.500	
TURBIDITY (FTU)		DET'N LIMIT = .02	GUIDELINE = 1.00 (A1)

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
APR	8.800	.080 <T	
MAY	5.200	.040 <T	
JUN	11.500	.040	
JUL	9.200	.270	
AUG	12.000	.100	
SEP	14.100	.370	
OCT	5.500	.530	
NOV	37.000	.190 <T	
DEC	24.000	.320	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
METALS			
SILVER (UG/L)		DET'N LIMIT = .020	GUIDELINE = 50. (A1)
APR	BDL	ISM	
MAY	BDL	.030 <T	
JUN	BDL	.030 <T	
JUL	BDL	BDL	
AUG	BDL	.050 <T	
SEP	BDL	BDL	
OCT	BDL	BDL	
NOV	BDL	.410 <T	
DEC	BDL	.080 <T	
ALUMINUM (UG/L)		DET'N LIMIT = .050	GUIDELINE = 100.(A4)
APR	111.360	ISM	
MAY	116.000	116.000	
JUN	185.600	98.600	
JUL	208.800	60.320	
AUG	174.000	105.560	
SEP	127.600	77.720	
OCT	162.400	116.000	
NOV	232.000	46.400	
DEC	174.000	35.960	
ARSENIC (UG/L)		DET'N LIMIT = 0.050	GUIDELINE = 50.0 (A1)
APR	.390 <T	ISM	
MAY	.690 <T	.900 <T	
JUN	.650 <T	.450 <T	
JUL	.500 <T	.530 <T	
AUG	.900 <T	.760 <T	
SEP	.990 <T	.800 <T	
OCT	.610 <T	.660 <T	
NOV	.790 <T	.670 <T	
DEC	.750 <T	.450 <T	
BARIUM (UG/L)		DET'N LIMIT = 0.020	GUIDELINE = 1000. (A1)
APR	16.000	ISM	
MAY	16.000	17.000	
JUN	20.000	20.000	
JUL	16.000	16.000	
AUG	19.000	15.000	
SEP	17.000	18.000	
OCT	17.000	17.000	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
NOV	19.000	17.000	
DEC	17.000	17.000	
BORON (UG/L)		DET'N LIMIT = 0.200	GUIDELINE = 5000. (A1)
APR	20.000 <T	ISN	
MAY	19.000 <T	14.000 <T	
JUN	30.000	19.000 <T	
JUL	16.000 <T	15.000 <T	
AUG	18.000 <T	15.000 <T	
SEP	45.000	47.000	
OCT	23.000	20.000 <T	
NOV	53.000	47.000	
DEC	140.000	44.000	
BERYLLIUM (UG/L)		DET'N LIMIT = 0.010	GUIDELINE = .20 (H)
APR	.040 <T	ISN	
MAY	.080 <T	.050 <T	
JUN	BDL	BDL	
JUL	BDL	BDL	
AUG	.030 <T	BDL	
SEP	.100 <T	.040 <T	
OCT	BDL	BDL	
NOV	.130 <T	.100 <T	
DEC	.120 <T	.080 <T	
CADMIUM (UG/L)		DET'N LIMIT = 0.050	GUIDELINE = 5.000 (A1)
APR	BDL	ISN	
MAY	.060 <T	.060 <T	
JUN	BDL	BDL	
JUL	BDL	BDL	
AUG	BDL	BDL	
SEP	BDL	BDL	
OCT	BDL	BDL	
NOV	.070 <T	BDL	
DEC	BDL	BDL	
COBALT (UG/L)		DET'N LIMIT = 0.020	GUIDELINE = 1000 (H)
APR	.120 <T	ISN	
MAY	.180 <T	.090 <T	
JUN	.220 <T	.030 <T	
JUL	.380 <T	.140 <T	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
CHROMIUM (UG/L)		DET'N LIMIT = 0.100	GUIDELINE = 50. (A1)
AUG	.230 <T	.090 <T	
SEP	.280 <T	.150 <T	
OCT	.200 <T	.110 <T	
NOV	.460 <T	.100 <T	
DEC	.350 <T	.110 <T	
CHROMIUM (UG/L)		DET'N LIMIT = 0.100	GUIDELINE = 50. (A1)
APR	2.200	ISM	
MAY	1.600	.190 <T	
JUN	1.700	BDL	
JUL	.550 <T	.130 <T	
AUG	.470 <T	BDL	
SEP	3.700	3.300	
OCT	2.800	.220 <T	
NOV	6.000	4.300	
DEC	4.500	3.700	
COPPER (UG/L)		DET'N LIMIT = .100	GUIDELINE = 1000 (A3)
APR	8.500	ISM	
MAY	1.800	.460 <T	
JUN	2.900	.820 <T	
JUL	2.800	.590 <T	
AUG	5.000	.550 <T	
SEP	3.100	.540 <T	
OCT	2.300	.310 <T	
NOV	3.500	.630 <T	
DEC	2.300	.370 <T	
IRON (UG/L)		DET'N LIMIT = 4.000	GUIDELINE = 300. (A3)
APR	170.000	ISM	
MAY	200.000	BDL	
JUN	270.000	8.600 <T	
JUL	410.000	BDL	
AUG	280.000	BDL	
SEP	280.000	BDL	
OCT	150.000	BDL	
NOV	420.000	BDL	
DEC	340.000	BDL	
MERCURY (UG/L)		DET'N LIMIT = 0.010	GUIDELINE = 1.000 (A1)
APR	ISS	BDL	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
MANGANESE (UG/L)		DET'N LIMIT = .050	GUIDELINE = 50.0 (A3)
MAY	BDL	BDL	
JUN	BDL	BDL	
JUL	.030 <T	.020 <T	
AUG	BDL	BDL	
SEP	.020 <T	.020 <T	
OCT	.020 <T	.020 <T	
NOV	.020 <T	.010	
DEC	ILA	.020 <T	
MOLYBDENUM (UG/L)		DET'N LIMIT = 0.020	GUIDELINE = 500 (H)
APR	7.400	ISM	
MAY	9.300	.460 <T	
JUN	12.000	.420 <T	
JUL	14.000	.130 <T	
AUG	12.000	.180 <T	
SEP	14.000	.280 <T	
OCT	5.400	.190 <T	
NOV	18.000	.320 <T	
DEC	15.000	.320 <T	
NICKEL (UG/L)		DET'N LIMIT = 0.100	GUIDELINE = 50. (F3)
APR	.550	ISM	
MAY	.480 <T	.680	
JUN	.580	.700	
JUL	.420 <T	.600	
AUG	.630	.600	
SEP	.400 <T	.640	
OCT	.650	.690	
NOV	.430 <T	.690	
DEC	.450 <T	.780	
APR	1.000 <T	ISM	
MAY	.670 <T	BDL	
JUN	BDL	BDL	
JUL	.740 <T	.220 <T	
AUG	.280 <T	BDL	
SEP	.760 <T	BDL	
OCT	1.000 <T	1.100 <T	
NOV	1.300 <T	BDL	
DEC	1.600 <T	.650 <T	

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DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
LEAD (UG/L)		DET'N LIMIT = 0.050	GUIDELINE = 50. (A1)
APR	.600	ISN	
MAY	.710	.030 <T	
JUN	1.300	.040 <T	
JUL	1.000	BDL	
AUG	1.000	.050 <T	
SEP	1.000	.070 <T	
OCT	.430	.030 <T	
NOV	1.900	.080 <T	
DEC	1.100	.050 <T	
ANTIMONY (UG/L)		DET'N LIMIT = .050	GUIDELINE = 146. (D4)
APR	.160 <T	ISN	
MAY	.180 <T	.190 <T	
JUN	.110 <T	.170 <T	
JUL	.150 <T	.160 <T	
AUG	.180 <T	.190 <T	
SEP	.410	.530	
OCT	.220	.180 <T	
NOV	.320	.480	
DEC	.270	.310	
SELENIUM (UG/L)		DET'N LIMIT = 0.200	GUIDELINE = 10. (A1)
APR	BDL	ISN	
MAY	.420 <T	.460 <T	
JUN	BDL	1.900 <T	
JUL	BDL	BDL	
AUG	.780 <T	.610 <T	
SEP	.850 <T	1.800 <T	
OCT	.850 <T	3.600 <T	
NOV	BDL	1.900 <T	
DEC	.810 <T	1.200 <T	
STRONTIUM (UG/L)		DET'N LIMIT = .050	GUIDELINE = 2000.(H)
APR	130.000	ISN	
MAY	120.000	110.000	
JUN	130.000	130.000	
JUL	110.000	120.000	
AUG	150.000	110.000	
SEP	120.000	120.000	
OCT	120.000	130.000	
NOV	140.000	130.000	

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DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
DEC	120.000	130.000	
TITANIUM (UG/L)		DET'N LIMIT = .050	GUIDELINE = N/A
APR	8.300	ISM	
MAY	5.900	4.000	
JUN	6.900	4.100	
JUL	8.700	3.100	
AUG	5.900	3.900	
SEP	6.300	5.600	
OCT	7.100	2.200	
NOV	7.500	5.500	
DEC	6.700	3.100	
THALLIUM (UG/L)		DET'N LIMIT = .010	GUIDELINE = 13. (D4)
APR	BDL	ISM	
MAY	.030 <T	.030 <T	
JUN	BDL	BDL	
JUL	BDL	BDL	
AUG	BDL	BDL	
SEP	.020 <T	BDL	
OCT	BDL	BDL	
NOV	.050 <T	.030 <T	
DEC	BDL	BDL	
URANIUM (UG/L)		DET'N LIMIT = .020	GUIDELINE = 20. (A2)
APR	.320	ISM	
MAY	.290	.110 <T	
JUN	.310	.050 <T	
JUL	.230	.030 <T	
AUG	.280	.070 <T	
SEP	.220	.050 <T	
OCT	.280	.240	
NOV	.310	.090 <T	
DEC	.270	.200 <T	
VANADIUM (UG/L)		DET'N LIMIT = .050	GUIDELINE = 100 (H)
APR	.350 <T	ISM	
MAY	.500 <T	.250 <T	
JUN	.700	.580	
JUL	.830	.660	
AUG	.730	.290 <T	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
SEP	.640	.320 <T	
OCT	.610	.470 <T	
NOV	.900	.350 <T	
DEC	.640	.310 <T	

ZINC (UG/L) DET'N LIMIT = .001 GUIDELINE = 5000. (A3)

APR	3.800	ISM	
MAY	2.900	1.200	
JUN	3.000	1.100	
JUL	3.600	1.300	
AUG	3.200	.780 <T	
SEP	3.700	1.200	
OCT	3.000	.950 <T	
NOV	5.800	1.300	
DEC	4.400	.840 <T	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
PESTICIDES & PCB			
ALPHA BHC (NG/L)		DET'N LIMIT = 1.000	GUIDELINE = 700 (G)
APR	3.000 <T	BDL	
MAY	3.000 <T	BDL	
JUN	BDL	BDL	
JUL	BDL	BDL	
AUG	1.000 <T	BDL	
SEP	1.000 <T	BDL	
OCT	1.000 <T	BDL	
NOV	BDL	BDL	
DEC	BDL	BDL	
LINDANE (NG/L)		DET'N LIMIT = 1.000	GUIDELINE = 4000 (A1)
APR	BDL	BDL	
MAY	1.000 <T	BDL	
JUN	BDL	BDL	
JUL	BDL	BDL	
AUG	BDL	BDL	
SEP	1.000 <T	BDL	
OCT	BDL	BDL	
NOV	BDL	BDL	
DEC	BDL	BDL	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
PHENOLICS (UG/L)	PHENOLICS	DET'N LIMIT = 0.2	GUIDELINE = 2.00 (A3)
APR	4.600	BDL	
MAY	.200 <T	.400 <T	
JUN	3.000	.600 <T	
JUL	1.600	.200 <T	
AUG	.200 <T	BDL	
SEP	2.600	2.000	
OCT	.800 <T	.400 <T	
NOV	2.000	.800 <T	
DEC	2.000	1.000	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
VOLATILES			
TOLUENE (UG/L)		DET'N LIMIT = .050	GUIDELINE = 24.0 (84)
APR	BDL	ISM	
MAY	BDL	BDL	
JUN	BDL	.050 <T	
JUL	BDL	BDL	
AUG	BDL	BDL	
SEP	BDL	BDL	
OCT	BDL	BDL	
NOV	BDL	BDL	
DEC	BDL	BDL	
ETHYLBENZENE (UG/L)		DET'N LIMIT = .050	GUIDELINE = 2.4 (84)
APR	BDL	ISM	
MAY	BDL	.050 <T	
JUN	BDL	.200 <T	
JUL	BDL	BDL	
AUG	BDL	.100 <T	
SEP	BDL	BDL	
OCT	BDL	BDL	
NOV	BDL	BDL	
DEC	BDL	BDL	
P-XYLENE (UG/L)		DET'N LIMIT = .100	GUIDELINE = 300 (84)
APR	BDL	ISM	
MAY	.100 RMP	BDL	
JUN	BDL	BDL	
JUL	BDL	BDL	
AUG	BDL	BDL	
SEP	BDL	BDL	
OCT	BDL	BDL	
NOV	BDL	BDL	
DEC	BDL	BDL	
M-XYLENE (UG/L)		DET'N LIMIT = .100	GUIDELINE = 300 (84)
APR	BDL	ISM	
MAY	.100 <T	BDL	
JUN	BDL	BDL	
JUL	BDL	BDL	
AUG	BDL	BDL	
SEP	BDL	BDL	
OCT	BDL	BDL	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
NOV	BDL	BDL	
DEC	BDL	BDL	
O-XYLENE (UG/L)		DET'N LIMIT = .050	GUIDELINE = 300 (B4)
APR	BDL	ISM	
MAY	.050 <T	BDL	
JUN	BDL	BDL	
JUL	BDL	BDL	
AUG	BDL	BDL	
SEP	BDL	BDL	
OCT	BDL	BDL	
NOV	BDL	BDL	
DEC	BDL	BDL	
METHYLENE CHLORIDE (UG/L)		DET'N LIMIT = .500	GUIDELINE = 1750 (D3)
APR	BDL	ISM	
MAY	BDL	BDL	
JUN	BDL	BDL	
JUL	BDL	BDL	
AUG	BDL	BDL	
SEP	BDL	BDL	
OCT	BDL	BDL	
NOV	BDL	BDL	
DEC	BDL	BDL	
T1,2DICHLOROETHYLENE (UG/L)		DET'N LIMIT = .100	GUIDELINE = 350 (D3)
APR	BDL	ISM	
MAY	BDL	BDL	
JUN	BDL	BDL	
JUL	BDL	BDL	
AUG	BDL	BDL	
SEP	BDL	BDL	
OCT	BDL	BDL	
NOV	BDL	BDL	
DEC	BDL	BDL	
CHLOROFORM (UG/L)		DET'N LIMIT = .100	GUIDELINE = 350 (A1+)
APR	BDL	ISM	
MAY	BDL	18.800	
JUN	BDL	20.700	
JUL	BDL	14.000	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
AUG	.200 <T	18.600	
SEP	BDL	17.200	
OCT	BDL	12.700	
NOV	.100 <T	11.900	
DEC	BDL	9.900	
111, TRICHLOROETHANE (UG/L)		DET'N LIMIT = .020	GUIDELINE = 200 (D1)
APR	BDL	ISM	
MAY	BDL	BDL	
JUN	BDL	BDL	
JUL	BDL	BDL	
AUG	BDL	BDL	
SEP	BDL	BDL	
OCT	BDL	BDL	
NOV	BDL	BDL	
DEC	BDL	BDL	
DICHLOROBROMOMETHANE (UG/L)		DET'N LIMIT = .050	GUIDELINE = 350 (A1+)
APR	BDL	ISM	
MAY	BDL	10.700	
JUN	BDL	13.200	
JUL	BDL	8.300	
AUG	BDL	10.600	
SEP	BDL	12.350	
OCT	BDL	9.750	
NOV	BDL	8.800	
DEC	BDL	8.700	
CHLORODIBROMOMETHANE (UG/L)		DET'N LIMIT = .100	GUIDELINE = 350 (A1+)
APR	BDL	ISM	
MAY	BDL	4.600	
JUN	BDL	8.900	
JUL	BDL	3.200	
AUG	BDL	7.600	
SEP	BDL	5.600	
OCT	BDL	6.900	
NOV	BDL	4.200	
DEC	BDL	6.600	
T-CHLOROETHYLENE (UG/L)		DET'N LIMIT = .050	GUIDELINE = 10.0 (C2)
APR	.300 <T	ISM	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM AMHERSTBURG WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM
	RAW	TREATED	
MAY	.100 <T	.300 <T	
JUN	BDL	.150 <T	
JUL	.300 <T	.250 <T	
AUG	.200 <T	.300 <T	
SEP	BDL	BDL	
OCT	BDL	.050 <T	
NOV	2.000	BDL	
DEC	.050 <T	.050 <T	
BROMOFORM (UG/L)		DET'N LIMIT = .200	GUIDELINE = 350 (A1+)
APR	BDL	ISM	
MAY	BDL	.600 <T	
JUN	BDL	.800 <T	
JUL	BDL	.400 <T	
AUG	BDL	1.000 <T	
SEP	BDL	.600 <T	
OCT	BDL	1.000 <T	
NOV	BDL	.600 <T	
DEC	BDL	.800 <T	
TOTL TRIHALOMETHANES (UG/L)		DET'N LIMIT = .500	GUIDELINE = 350 (A1)
APR	BDL	ISM	
MAY	BDL	34.700	
JUN	BDL	43.600	
JUL	BDL	25.900	
AUG	BDL	37.800	
SEP	BDL	35.750	
OCT	BDL	30.350	
NOV	BDL	25.500	
DEC	BDL	26.000	

Table 6

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
BACTERIOLOGICAL			
STANDARD PLATE COUNT MEMBRANE FILTRATION	CT/ML	0	500/ML(A1)
P/A BOTTLE		0	0 (A1*)
TOTAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	5/100mL(A1)
TOTAL COLIFORM BACKGROUND MF	CT/100ML	0	N/A
CHLOROAROMATICS			
HEXACHLOROBUTADIENE	NG/L	1.000	450. (D4)
1,2,3-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,3,4-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,3,5-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,4-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,4,5-TETRACHLOROBENZENE	NG/L	1.000	38000 (D4)
1,3,5-TRICHLOROBENZENE	NG/L	5.000	10000 (D4)
HEXACHLOROBENZENE	NG/L	1.0	10. (C1)
HEXACHLOROETHANE	NG/L	1.000	1900. (D4)
OCTACHLOROSTYRENE	NG/L	1.000	N/A
PENTACHLOROBENZENE	NG/L	1.000	74000 (D4)
2,3,6-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,4,5-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,6,A-TRICHLOROTOLUENE	NG/L	5.000	N/A
CHLOROPHENOLS			
2,3,4-TRICHLOROPHENOL	NG/L	50.	N/A
2,3,4,5-TETRACHLOROPHENOL	NG/L	50.	N/A
2,3,5,6-TETRACHLOROPHENOL	NG/L	50.	N/A
2,4,5-TRICHLOROPHENOL	NG/L	50.	2600000 (D4)
2,4,6-TRICHLOROPHENOL	NG/L	50.	5000. (B1)
PENTACHLOROPHENOL	NG/L	50.	60000. (B1)
CHEMISTRY (FLD)			
FIELD COMBINED CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD FREE CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD TOTAL CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD PH	DMSNLESS	N/A	6.5-8.5(A4)
FIELD TEMPERATURE	°C	N/A	<15 °C(A1)
FIELD TURBIDITY	FTU	N/A	1.0 (A1)
CHEMISTRY (LAB)			
ALKALINITY	MG/L	.200	30-500(A4)
CALCIUM	MG/L	.100	100. (F2)
CYANIDE	MG/L	.001	.20(A1)
CHLORIDE	MG/L	.200	250. (A3)
COLOUR	TCU	.5	5.0 (A3)
CONDUCTIVITY	UMHO/CM	1.	400. (F2)
FLUORIDE	MG/L	.01	2.4 (A1)
HARDNESS	MG/L	.50	80-100(A4)
MAGNESIUM	MG/L	.05	30. (F2)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
NITRITE	MG/L	.001	1.0 (A1)
TOTAL NITRATES	MG/L	.02	10. (A1)
NITROGEN TOTAL KJELDAHL	MG/L	.02	N/A
PH	DMSNLESS	N/A	6.5-8.5(A4)
PHOSPHORUS FIL REACT	MG/L	.0005	N/A
PHOSPHORUS TOTAL	MG/L	.002	.40(F2)
TOTAL SOLIDS	MG/L	1.	500. (A3)
TURBIDITY	FTU	.02	1.0 (A1)
METALS			
ALUMINUM	UG/L	.050	100. (A4)
ANTIMONY	UG/L	.050	146. (D4)
ARSENIC	UG/L	.050	50. (A1)
BARIUM	UG/L	.020	1000. (A1)
BORON	UG/L	.200	5000. (A1)
BERYLLIUM	UG/L	.010	0.20 (H)
CADMIUM	UG/L	.050	5.0 (A1)
COBALT	UG/L	.020	1000. (H)
CHROMIUM	UG/L	.100	50. (A1)
COPPER	UG/L	.100	1000. (A3)
IRON	UG/L	5.0	300. (A3)
MERCURY	UG/L	.01	1.0 (A1)
MANGANESE	UG/L	.050	50. (A3)
MOLYBDENUM	UG/L	.020	500. (H)
NICKEL	UG/L	.100	50. (F3)
LEAD	UG/L	.020	50. (A1)
SELENIUM	UG/L	.200	10. (A1)
SILVER	UG/L	.020	50. (A1)
STRONTIUM	UG/L	.100	2000. (H)
THALLIUM	UG/L	.010	13. (D4)
TITANIUM	UG/L	.100	N/A
URANIUM	UG/L	.020	20. (A2)
VANADIUM	UG/L	.020	100. (H)
ZINC	UG/L	.020	5000. (A3)
PHENOLICS			
PHENOLICS (UNFILTERED REACTIVE)	UG/L	.2	2.0 (A3)
PESTICIDES & PCB			
ALDRIN	NG/L	1.0	700. (A1)
AMETRINE	NG/L	50.	300000. (D3)
ATRAZINE	NG/L	50.	60000. (B3)
ALPHA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	700. (G)
BETA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	300. (G)
GAMMA HEXACHLOROCYCLOHEXANE(LINDANE)	NG/L	1.0	4000. (A1)
ALPHA CHLORDANE	NG/L	2.0	7000. (A1)
GAMMA CHLORDANE	NG/L	2.0	7000. (A1)
BLADEX	NG/L	100.	10000. (B3)
DIELDRIN	NG/L	2.0	700. (A1)
METHOXYCHLOR	NG/L	5.0	100000. (A1)
ENDOSULFAN 1 (THIODAN I)	NG/L	2.0	74000. (D4)
ENDOSULFAN 2 (THIODAN II)	NG/L	4.0	74000. (D4)
ENDRIN	NG/L	4.0	200. (A1)
ENDOSULFAN SULPHATE(THIODAN SULPHATE)	NG/L	4.0	N/A
HEPTACHLOR EPOXIDE	NG/L	1.0	3000. (A1)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
HEPTACHLOR	NG/L	1.0	3000.	(A1)
METOLACHLOR	NG/L	500.	50000.	(B3)
MIREX	NG/L	5.0	N/A	
OXYCHLORDANE	NG/L	2.0	N/A	
O,P-DDT	NG/L	5.0	30000.	(A1)
PCB	NG/L	20.0	3000.	(A2)
O,P-DDD	NG/L	5.0	N/A	
PPDDE	NG/L	1.0	30000.	(A1)
PPDDT	NG/L	5.0	30000.	(A1)
ATRATONE	NG/L	50.	N/A	
ALACHLOR	NG/L	500.	35000.	(D2)
PROMETONE	NG/L	50.	52500.	(D3)
PROPAZINE	NG/L	50.	16000.	(D2)
PROMETRYNE	NG/L	50.	1000.	(B3)
SENCOR (METRIBUZIN)	NG/L	100.	80000.	(B2)
SIMAZINE	NG/L	50.	10000.	(B3)
POLYAROMATIC HYDROCARBONS				
PHENANTHRENE	NG/L	10.0	N/A	
ANTHRACENE	NG/L	1.0	N/A	
FLUORANTHENE	NG/L	20.0	42000.	(D4)
PYRENE	NG/L	20.0	N/A	
BENZO(A)ANTHRACENE	NG/L	20.0	N/A	
CHRYSENE	NG/L	50.0	N/A	
DIMETHYL BENZO(A)ANTHRACENE	NG/L	5.0	N/A	
BENZO(E)PYRENE	NG/L	50.0	N/A	
BENZO(B)FLUORANTHENE	NG/L	10.0	N/A	
PERYLENE	NG/L	10.0	N/A	
BENZO(K)FLUORANTHENE	NG/L	1.0	N/A	
BENZO(A)PYRENE	NG/L	5.0	10.	(B1)
BENZO(G,H,I)PERYLENE	NG/L	20.0	N/A	
DIBENZO(A,H)ANTHRACENE	NG/L	10.0	N/A	
INDENO(1,2,3-C,D)PYRENE	NG/L	20.0	N/A	
BENZO(B)CHRYSENE	NG/L	2.0	N/A	
CORONENE	NG/L	10.0	N/A	
SPECIFIC PESTICIDES				
TOXAPHENE	NG/L	N/A	5000.	(A1)
2,4,5-TRICHLOROBUTYRIC ACID (2,4,5-T)	NG/L	50.	280000.	(B1)
2,4-DICHLOROBUTYRIC ACID (2,4-D)	NG/L	100.	100000.	(A1)
2,4-DICHLORORPHENOXYBUTYRIC ACID	NG/L	200.	18000.	(B3)
2,4-D PROPIONIC ACID	NG/L	100.	N/A	
DICAMBA	NG/L	100.	87000.	(B3)
PICHLORAM	NG/L	100.	2450000.	(D3)
SILVEX (2,4,5-TP)	NG/L	50.	10000.	(A1)
DIAZINON	NG/L	20.	14000.	(A1)
DICHLOROVOS	NG/L	20.	N/A	
DURSBAN	NG/L	20.	N/A	
ETHION	NG/L	20.	35000.	(G)
GUTHION	NG/L	N/A	N/A	
MALATHION	NG/L	20.	160000.	(G)
MEVINPHOS	NG/L	20.	N/A	
METHYL PARATHION	NG/L	50.	7000.	(B3)
METHYLTRITHION	NG/L	20.	N/A	
PARATHION	NG/L	20.	35000.	(B1)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
PHORATE (THIMET)	NG/L	20.	35. (D2)
RELDAN	NG/L	20.	N/A
RONNEL	NG/L	20.	N/A
AMINOCARB	NG/L	N/A	N/A
BENONYL	NG/L	N/A	N/A
BUX (METALKAMATE)	NG/L	2000.	N/A
CARBOFURAN	NG/L	2000.	18000. (D3)
CICP (CHLORPROPHAM)	NG/L	2000.	350000. (G)
DIALLATE	NG/L	2000.	30000. (H)
EPTAM	NG/L	2000.	N/A
IPC	NG/L	2000.	N/A
PROPOXUR (BAYGON)	NG/L	2000.	90000. (G)
SEVIN (CARBARYL)	NG/L	200.	70000. (A1)
SUTAN (BUTYLATE)	NG/L	2000.	245000. (D3)
VOLATILES			
BENZENE	UG/L	.050	5.0 (B1)
TOLUENE	UG/L	.050	24.0 (B4)
ETHYLBENZENE	UG/L	.050	2.4 (B4)
PARA-XYLENE	UG/L	.100	300. (B4)
META-XYLENE	UG/L	.100	300. (B4)
ORTHO-XYLENE	UG/L	.050	300. (B4)
1,1-DICHLOROETHYLENE	UG/L	.100	7.0 (D1)
ETHLYENE DIBROMIDE	UG/L	.05	50. (G)
METHYLENE CHLORIDE	UG/L	.500	1750. (D3)
TRANS-1,2-DICHLOROETHYLENE	UG/L	.100	350. (D3)
1,1-DICHLOROETHANE	UG/L	.100	N/A
CHLOROFORM	UG/L	.100	350. (A1+)
1,1,1-TRICHLOROETHANE	UG/L	.020	200. (D1)
1,2-DICHLOROETHANE	UG/L	.050	5.0 (D1)
CARBON TETRACHLORIDE	UG/L	.200	5.0 (D1)
1,2-DICHLOROPROPANE	UG/L	.050	10.0 (G)
TRICHLOROETHYLENE	UG/L	.100	5.0 (D1)
DICHLOROBROMOMETHANE	UG/L	.050	350. (A1+)
1,1,2-TRICHLOROETHANE	UG/L	.050	.60(D4)
CHLORODIBROMOMETHANE	UG/L	.100	350. (A1+)
TETRACHLOROETHYLENE	UG/L	.050	10.0 (C2)
BROMOFORM	UG/L	.200	350. (A1+)
1,1,2,2-TETRACHLOROETHANE	UG/L	.050	0.17(D4)
CHLOROBENZENE	UG/L	.100	1510. (D3)
1,4-DICHLOROBENZENE	UG/L	.100	5.0 (B1)
1,3-DICHLOROBENZENE	UG/L	.100	130. (G)
1,2-DICHLOROBENZENE	UG/L	.050	200. (B1)
TRIFLUOROCHLOROTOLUENE	UG/L	.100	N/A
TOTAL TRIHALOMETHANES	UG/L	.500	350. (A1)
STYRENE	UG/L	.05	46.5 (D2)